

WHAT IS CLAIMED:

1. A horizontal form-fill seal machine for combined in-line and rotational manufacturing of food packages having shrouded mated fastener tracks with slider closures, comprising:

a supply of web material extending in an in-line machine direction defining a serial succession of package sidewalls extending in the machine direction;

10 first track with a shorter flange mated to a second track with a longer flange;

a folding member receiving said web material;

15 a web drive transporting said web material over said folding member in the in-line machine direction, folding said web material into overlying side-by-side portions, one against the other, to form a continuous succession of folded package portions extending in the machine direction and having pairs of overlying first and second package sidewalls having overlying free edges with 20 shroud portions at the free edges;

a slider member mateable with said mated fastener tracks for movement along said mated fastener tracks in opposite directions to open and close said mated fastener tracks;

25 a slider installation member inserting said slider member onto said mated fastener tracks;

fastener seal bars extending in the machine direction, sealing a portion of each flange of said fastener tracks to said first sidewall, leaving the 30 flanges free of attachment to the second package sidewall;

side seal bars extending at an angle to said machine direction, sealing portions of said package sidewalls together to form respective side seals of the food package;

a filler member filling product into said package;

a sidewall sealing member sealing said second package sidewall to said second track flange;

5 a shroud sealing member sealing the free edges of said package sidewalls to form a shroud enclosing said fastener tracks, to thereby form a completed food package;

a turntable member mounting said filler member, said side wall sealing member and said shroud sealing 10 member for movement in a rotational direction; and

a transfer station mounted on said turntable for transferring said completed food package away from said machine.

2. The machine of claim 1 further comprising a 15 separating member separating the completed food package from the folded package portions.

3. The machine of claim 1 wherein said separating member is located immediately adjacent said turntable and said machine further comprises a loading 20 member transferring the completed food package to the turntable.

4. The machine of claim 1 wherein said loading member is carried on said turntable.

5. The machine of claim 1 wherein a cavity is 25 formed between the package sidewalls, the machine further comprising a package opening member carried on said turntable upstream of said filler member to separate free edges of the package sidewalls in preparation for a filling operation and a gas flushing member flushing the 30 cavity in preparation for a filling operation.

6. The machine of claim 1 further comprising a stop forming station through which said mated fastener tracks pass, to crush a portion of said mated fastener tracks to form a stop member.

5 7. The machine of claim 6 wherein said stop forming station is located upstream of said slider installation member and said slider installation member is located upstream of said fastener seal bars.

10 8. The machine of claim 7 wherein said slider installation member positions a slider member immediately downstream of the stop member.

15 9. The machine of claim 1 further comprising a clam shell funnel member carried on said turntable having a free end insertable below seals formed by said fastener seal bars.

10. The machine of claim 1 further comprising a gas flushing station carried on said turntable, upstream of said filler member to flush the interior of the food package.

20 11. The machine of claim 1 wherein said folding member, said web drive, said slider installation member, said fastener seal bars and said side seal bars all extend generally along a common line extending in the in-line machine direction.

25 12. The machine of claim 11 wherein two pairs of fastener sealing bars are providing for sealing the mated fastener tracks, and wherein the mounting flanges extend from the fastener tracks different amounts, with one mounting flange having a greater height than the

other, with the food package viewed in an upright position.

13. The machine of claim 12 wherein said fastener seal bars form at least one peel seal and at 5 least one permanent seal so as to seal medial portions of said package walls, intermediate the shroud portion at the top of the package walls and the bottom of the package walls.

14. The machine of claim 13 further comprising 10 a notching member upstream of said folding member for forming a notch in the shroud portion.

15. A horizontal form-fill seal machine for combined in-line and rotational manufacturing of food packages having shrouded mated fastener tracks with slider 15 closures, comprising:

a supply of web material extending in an in-line machine direction defining a serial succession of package sidewalls extending in the in-line machine direction;

20 a supply of mated fastener tracks, including a first track with a shorter flange mated to a second track with a longer flange;

a folding member receiving said web material;

25 a web drive transporting said web material over said folding member in the in-line machine direction, folding said web material into overlying side-by-side portions, one against the other, to form a continuous succession of folded package portions extending in the machine direction and having pairs of overlying first and second package sidewalls having overlying free edges with 30 shroud portions at the free edges;

a slider member mateable with said mated fastener tracks for movement along said mated fastener

tracks in opposite directions to open and close said mated fastener tracks;

a slider installation member inserting said slider member onto said mated fastener tracks;

5 fastener seal bars extending in the machine direction, sealing a portion of each flange of said fastener tracks to said first sidewall, leaving the flanges free of attachment to the second package sidewall;

10 side seal bars extending at an angle to said machine direction, sealing portions of said package sidewalls together to form respective side seals of the food package;

a filler member filling product into said package;

15 a sidewall sealing member sealing said second package sidewall to said second track flange;

a shroud sealing member sealing the free edges of said package sidewalls to form a shroud enclosing said fastener tracks, to thereby form a completed food package;

20 a turntable member mounting said filler member, said side wall sealing member and said shroud sealing member for movement in a rotational direction;

25 a transfer station mounted on said turntable for transferring said completed food package away from said machine; and

a separating member carried on the turntable separating the completed food package from the folded package portions;

30 a loading member carried on the turntable transferring the completed food package to the turntable, upstream of said filler member; and

35 said folding member, said web drive, said slider installation member, said fastener seal bars and said side seal bars aligned along a common line extending generally in the in-line machine direction.

16. A method of making a flexible package for food products, comprising the steps of:

providing a supply of web material defining a serial succession of package sidewalls;

5 paying out a first portion of the web material;

providing a supply of mated fastener tracks, including a first track with a shorter flange mated to second track with a longer flange;

10 paying out a first portion of the mated fastener tracks;

crushing a serial succession of spaced apart portions of said mated fastener tracks to form a serial succession of spaced apart slider stop portions;

15 folding the web material to form a serial succession of folded package portions, each folded package portion having overlapping first and second package sidewalls with overlying free ends and shroud portions at the free ends, and intermediate portions spaced from the shroud portions;

20 aligning the mated fastener tracks in-line with the intermediate portions;

providing a supply of sliders;

dispensing the sliders one at a time;

inserting sliders on the mated fastener tracks;

25 joining at least a part of the mated fastener tracks to the intermediate portion of said first package sidewall;

30 forming a second fastener track seal between a portion of the second fastener track flange and a portion of said first package sidewall adjacent the intermediate portion thereof;

forming a permanent seal between the first fastener track flange and the first package sidewall;

forming transverse, side seals for each package

portion to cooperate with said sidewalls to form a pouch;
severing the pouch from the web material and
mated fastener tracks to form a separate flexible package;
providing a turntable;
5 transferring the separate flexible package to
the turntable;
separating the overlying free ends of the
package portions while on the turntable to form an
opening;
10 filling the pouch while on the turntable with
product through the opening;
joining one of the mated fastener tracks to the
intermediate portion of said second package sidewall while
on the turntable to close the upper portion of the pouch;
15 sealing free edges of the package sidewalls
while on the turntable to form a shroud enclosing said
mated fastener tracks to thereby form a completed food
package; and
transferring the completed food package away
20 from the turntable.

17. The method of claim 16 wherein the step of
forming a second fastener track seal comprises forming a
peel seal.
- 25 18. The method of claim 16 wherein the step of
inserting the slider is performed before the step of
joining the mated fastener tracks to the package
sidewalls.

30 19. The method of claim 16 further comprising
the steps of forming a weakening line in at least one of
said sidewalls extending across the mated fastener tracks,
to a termination point below said mated fastener tracks,
and forming a tear line in at least one of said sidewalls

along a line extending below said mated fastener tracks and intersecting said termination point.

20. The method of claim 16 further comprising the step of forming a slider-receiving opening in at least 5 one of said sidewalls to receive a portion of said slider.

21. The method of claim 16 wherein the mated fastener tracks include downwardly depending flanges and the step of the joining at least a part of the mated fastener tracks to the first package sidewall comprises 10 the step of providing a heat shield and inserting the heat shield between the flanges while applying heat and pressure.